What is claimed is:

Claims

1. A method of assessing whether a patient is afflicted with colon cancer, the method comprising comparing:

a) the level of expression of one or several colon cancer marker genes in a patient sample, and

b) the normal level of expression of one or several of said marker genes in a sample from a control subject not afflicted with colon cancer ,

wherein at least one of said marker genes is selected from the group consisting of the genes listed in Table 1 and a significant difference between the level of expression of one or several of said marker genes in the patient sample and the normal level of one or several of said marker genes is an indication that the patient is afflicted with colon cancer.

2. The method of claim 1, wherein several of said colon cancer marker gene is selected from the group consisting of the genes listed in Table 1.

3. The method of claim 1, wherein at least of one of said marker genes encodes a secreted protein.

4. The method of claim 1, wherein the sample comprises cells obtained from the patient.

5. The method of claim 4, wherein the sample is a colon tissue sample.

6. The method of claim 5, wherein the cells are in a fluid selected from the group consisting of blood fluids, colon fluid, lymph fluid and urine.

7. The method of claim 1, wherein the level of expression of said marker genes in the samples is assessed by detecting the presence in the samples of a protein

encoded by each of said marker gene or a polypeptide or protein fragment comprising said protein.

8. The method of claim 7, wherein the presence of said protein, polypeptide or protein fragment is detected using a reagent which specifically binds with said protein, polypeptide or protein fragment.

9. The method of claim 8, wherein the reagent is selected from the group consisting of an antibody, an antibody derivative, and an antibody fragment.

10. The method of claim 1, wherein the level of expression of said marker genes in the sample is assessed by detecting the presence in the sample of a transcribed polynucleotide encoded by each of said marker genes or a portion of said transcribed polynucleotide.

11. The method of claim 10, wherein the transcribed polynucleotide is an mRNA or hnRNA.

12. The method of claim 10, wherein the transcribed polynucleotide is a cDNA.

13. The method of claim 10, wherein the step of detecting further comprises amplifying the transcribed polynucleotide.

14. The method of claim 1, wherein the level of expression of said marker genes in the samples is assessed by detecting the presence in the samples of a transcribed polynucleotide which anneals with each of said marker genes or anneals with a portion of said transcribed polynucleotide, under stringent hybridization conditions.

15. The method of claim 1, wherein said significant difference comprises an at least two fold difference between the level of expression of one of said marker

genes in the patient sample and the normal level of expression of the same marker gene in the sample from the control subject.

16. The method of claim 15, wherein said significant difference comprises an at least five fold difference between the level of expression of one of said marker genes in the patient sample and the normal level of expression of the same marker gene in the sample from the control subject.

17. The method of claim 1, comprising comparing:

a) the level of expression in the patient sample of each of a plurality of marker genes independently selected from the genes listed in Table 1, and

b) the normal level of expression of each of the plurality of marker genes in the sample obtained from the control subject,

wherein the level of expression of at least one of the marker genes is significantly altered, relative to the corresponding normal level of expression of the marker genes, is an indication that the patient is afflicted with colon cancer.

18. The method of claim 17, wherein the level of expression of each of the marker genes is significantly altered, relative to the corresponding normal levels of expression of the marker genes, is an indication that the patient is afflicted with colon cancer.

19. The method of claim 18, wherein the plurality comprises at least three of the marker genes.

20. The method of claim 19, wherein the plurality comprises at least five of the marker genes.

21. A method for monitoring the progression of colon cancer in a patient, the method comprising:

a) detecting in a patient sample at a first point in time the expression of one or several colon cancer marker genes;

b) repeating step a) at a subsequent point in time; and

c) comparing the level of expression of said marker genes detected in steps a) and b), and therefrom monitoring the progression of colon cancer;

wherein at least of said marker gene is selected from the group consisting of the genes listed in Table 1.

22. The method of claim 21, wherein said marker gene is selected from the group consisting of the genes listed in Table 1.

23. The method of claim 21, wherein at least one of said marker gene encodes a secreted protein.

24. The method of claim 21, wherein the sample comprises cells obtained from the patient.

25. The method of claim 21, wherein the patient sample is a colon tissue sample.

26. The method of claim 21, wherein between the first point in time and the subsequent point in time, the patient has undergone surgery to remove colon tissue.

27. A method of assessing the efficacy of a test compound for inhibiting colon cancer in a patient, the method comprising comparing:

a) expression of one or several colon cancer marker gene in a first sample obtained from the patient and exposed to the test compound; and

b) expression of one or several of said marker genes in a second sample obtained from the patient, wherein the second sample is not exposed to the test compound,

wherein at least one of said marker genes is selected from the group consisting of the genes listed in Table 1, and a significantly lower level of expression of one of said marker genes in the first sample, relative to the second sample, is an indication that the test compound is efficacious for inhibiting colon cancer in the patient.

28. The method of claim 27, wherein the first and second samples are portions of a single sample obtained from the patient.

29. The method of claim 27, wherein the first and second samples are portions of pooled samples obtained from the patient.

30. A method of assessing the efficacy of a therapy for inhibiting colon cancer in a patient, the method comprising comparing:

a) expression of one or several colon cancer marker genes in the first sample obtained from the patient prior to providing at least a portion of the therapy to the patient, and

b) expression of one or several of said marker genes in a second sample obtained from the patient following provision of the portion of the therapy,

wherein at least one of said marker genes is selected from the group consisting of the genes listed in Table 1, and a significantly lower level of expression of one of said marker genes in the second sample, relative to the first sample, is an indication that the therapy is efficacious for inhibiting colon cancer in the patient.

31. A method of selecting a composition for inhibiting colon cancer in a patient, the method comprising:

a) obtaining a sample comprising cancer cells from the patient;

b) separately exposing aliquots of the sample in the presence of a plurality of test compositions;

c) comparing expression of one or several colon cancer marker genes in each of the aliquots; and

d) selecting one of the test compositions which alters the level of expression of one or several of the marker genes in the aliquot containing that test composition, relative to other test compositions;

wherein at least one of said marker gene is selected from the group consisting of the genes listed in Table 1.

32. A method of inhibiting colon cancer in a patient, the method comprising:

a) obtaining a sample comprising cancer cells from the patient;

b) separately maintaining aliquots of the sample in the presence of a plurality of test compositions;

c) comparing expression of one or several colon cancer marker genes in each of the aliquots; and

d) administering to the patient at least one of the test compositions which alters the level of expression of one or several of said marker genes in the aliquot containing that test composition, relative to other test compositions,

wherein at least one of said marker genes is selected from the group consisting of the genes listed in Table 1.

33. A kit for assessing whether a patient is afflicted with colon cancer, the kit comprising reagents for assessing expression of one or several colon cancer marker genes, wherein at least one of said marker genes is selected from the group consisting of the genes listed in Table 1.

34. A kit for assessing the presence of colon cancer cells, the kit comprising a nucleic acid probe which specifically binds with a transcribed polynucleotide encoded by a marker gene selected from the group consisting of the marker genes listed in Table 1.

35. A kit for assessing the suitability of each of a plurality of compounds for inhibiting colon cancer in a patient, the kit comprising:

a) the plurality of compounds; and

b) a reagent for assessing expression of one or several colon cancer marker genes, wherein at least one of said marker genes is selected from the group consisting of the genes listed in Table 1.

36. A method of making an isolated hybridoma which produces an antibody useful for assessing whether a patient is afflicted with colon cancer, the method comprising:

immunizing a mammal using a composition comprising a protein encoded by a gene listed in Table 1 or a polypeptide or protein fragment of said protein;

isolating splenocytes from the immunized mammal;

fusing the isolated splenocytes with an immortalized cell line to form hybridomas; and

screening individual hybridomas for production of an antibody which specifically binds with said protein, polypeptide or protein fragment to isolate the hybridoma.

37. An antibody produced by a hybridoma made by the method of claim 36.

38. A kit for assessing the presence of human colon cancer cells, the kit comprising an antibody, wherein the antibody specifically binds with a protein encoded by a gene listed in Table 1 or a polypeptide or protein fragment of said protein.

39. A method of assessing the colon cell carcinogenic potential of a test compound, the method comprising:

a) maintaining separate aliquots of colon cells in the presence and absence of the test compound; and

b) comparing expression of one or several colon cancer marker gene in each of the aliquots,

wherein at least one of said marker genes is selected from the group consisting of the genes listed in Table 1, and a significantly altered level of expression of one or several marker genes in the aliquot maintained in the presence of the test compound, relative to the aliquot maintained in the absence of the test compound, is an indication that the test compound possesses human colon cell carcinogenic potential.

40. A kit for assessing the colon cell carcinogenic potential of a test compound, the kit comprising colon cells and a reagent for assessing expression of a gene listed in Table 1.

41. A method of inhibiting colon cancer in a patient at risk for developing colon cancer, the method comprising inhibiting expression of a gene listed in Table 1.

42. A method of treating a patient afflicted with colon cancer, the method comprising providing to cells of the patient an antisense oligonucleotide complementary to a polynucleotide encoded by a gene listed in Table 1 or a segment of said polynucleotide.

43. A method for determining whether colon cancer has metastasized in a patient, the method comprising comparing:

a) the level of expression of one or several colon cancer marker genes in a patient sample, and

b) the normal level or non-metastatic level of expression of one or several of said marker genes in a control sample

wherein at least one of said marker genes is selected from the group consisting of the genes listed in Table 1, and a significant difference between the level of expression of one or several of said marker genes in the patient sample and the normal level or non-metastatic level is an indication that the colon cancer has mestastasized.

44. The method of claim 43, wherein several of said marker genes are selected from the genes listed in Table 1.

45. The method of claim 43, wherein at least one of said marker genes encodes a secreted protein.

46. The method of claim 43, wherein the sample comprises cells obtained from the patient.

47. The method of claim 43, wherein the patient sample is a colon tissue sample.

48. A method for assessing the aggressiveness or indolence of colon cancer comprising comparing:

a) the level of expression of one or several colon cancer marker gene in a sample, and

b) the normal level of expression of one or several of said marker genes in a control sample,

wherein at least one of said marker genes is selected from the marker genes of Table 1, and a significant difference between the level of expression of one or several of said marker gene in the sample and the normal level is an indication that the cancer is aggressive or indolent.

49. The method of claim 48, wherein several of said marker genes are selected from the group consisting of the marker genes listed in Table 1.

50. The method of claim 48, wherein at least one of said marker genes encodes a secreted protein.

51. The method of claim 48, wherein the sample comprises cells obtained from the patient.

52. The method of claim 48, wherein the patient sample is a colon tissue sample.